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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,895	12/08/2000	Hyeon-Ho Son	8733.337.00	1204
30827	7590	10/19/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/731,895

Applicant(s)

SON, HYEON-HO

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 10-14, 19-21, 27-31 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 15-18, 22-26, 32-34, 36-40 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/30/2004 has been entered.
2. Applicant's amendment dated 04/22/2004 has been received and entered. By the amendment, claims 1-9, 15-18, 22-26, 32-34 and 36-40 are now pending in the application.

### ***Specification***

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the original specification does not disclose a pixel electrode having a slit, wherein the pixel electrode is disconnected at the slit.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 40, it is confusing and unclear how the pixel electrode can be operated (i.e., display) while it is disconnected at the slit. According to an LCD device, the pixel electrode would be connected to a thin film transistor (TFT) for the purposes of driving such electrode. Therefore, only a portion of the Applicant's pixel electrode connected to the TFT would be driving while the other portion of that would not be under applying voltage ? Therefore, it is assumed for the purposes of examination, as best understood, the pixel electrode is not disconnected at the slit, the slit is just formed on the pixel electrode.

Correction to the language is suggested to clarify the claimed subject matter.

***Claim Rejections - 35 USC § 102***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 1-4, 6-7, 15, 22-24, 32-34, 36-37 and 39-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Young, US Patent No. 6,441,873.

The above claims are anticipated by Young's figures 1-2 which disclose a liquid crystal display (LCD) device (figure 1) comprising:

- . first and second substrate (12, 11);
- . gate and data lines (20, 21) formed on the first substrate (12);
- . a switching device (thin film transistor TFT 18);
- . a pixel electrode (45) formed on the first substrate (12), wherein the pixel electrode having slits (depressions 50 and bordering pixel 10 corresponding to the data line 21) and the side edge portions being bent toward the second substrate (11) (i.e., convex shape);

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. a common electrode (16) formed on the second substrate (11), wherein a first distance of a central region of the pixel electrode from the common electrode is greater than a second distance of the side edges of the pixel electrode from the common electrode (figure 1);

. a center electrode (35) formed below slits (50) and same layer as data line (21), wherein the center electrode (35) electrically connected to the common electrode (16) (according to driving LCD);

. a twisted-nematic liquid crystal layer (15) (col. 6, ln. 57).

8. Claims 39-40 are rejected under 35 U.S.C. 102(e) as being anticipated by over Ha, US 6,275,275.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 39-40 are anticipated by Ha's figures 5 which disclose a switching device (i.e., thin film transistor TFT) using in an active matrix LCD device comprising gate and data lines (according to the active matrix LCD), a pixel electrode (57-1 and 57-2) having a slit therebetween and two side edge portion being bent and symmetrical with reference to the slit, a common electrode and a liquid crystal layer inherently forming in the LCD device.

*Claim Rejections - 35 USC § 103*

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 8-9, 16-18, 25-26 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young, US Patent No. 6,441,873, in view of Applicant admitted prior art (APA), figure 5.

Regarding claims 8-9, 16-18 and 26, Young discloses the claimed invention as described above except for a rib forming on the second substrate. APA's figure 5 does disclose a rib (19) formed a common substrate (17) to define multi-domains. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ a rib on a substrate opposed to a pixel electrode substrate as shown by APA in order to improve a wide-viewing angle in an LCD device.

Regarding claims 25 and 38, the modification to Young disclose the LCD having the rib forming on the second substrate as described above; the modification to Young does not disclose the LCD device including at least two ribs. One of ordinary skill in the art would have realized the desire to form at least two ribs over pixel electrodes for forming multi-domains in the pixel electrode (e.g., more than four domains in each pixel electrode). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the Young 's LCD device as a multi-domain LCD device because it is a common practice in the art to improve a wide-viewing angle in a multi-domain LCD device.

*Allowable Subject Matter*

1. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record discloses or suggests alone or in combination that an LCD device in which a pixel electrode having a slit and a convex-shaped side edge, a center electrode forming below the slit and same layer as a gate line as set forth in claim 5.

*Response to Arguments*

3. Applicant's arguments filed 04/22/2004 have been fully considered but they are not persuasive:

Applicant, again, contends that none of the cited references, singly or in combination, teaches or suggests "a pixel electrode in one of the pixel regions on the first substrate, the pixel electrode having a slit therethrough and side edge portions, the side edge portions being bent" (amendment, pages 8-10). The Examiner, again, is not convinced by this argument since the same is true of the Young's pixel electrode. The Examiner agrees that the Young's depressions 50 are part of the contact holes 47; however, as stated in the previous office action, such depressions can be a slit as well (see final office action, page 4). In addition, Applicant states that the Applicant's pixel electrode is physically disconnected at the slit (amendment, page 9); however, such contention has not been supported in the original specification as well as is

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confusing and unclear as stated above. Therefore, both Applicant and Young pixel electrodes would be the same as well.

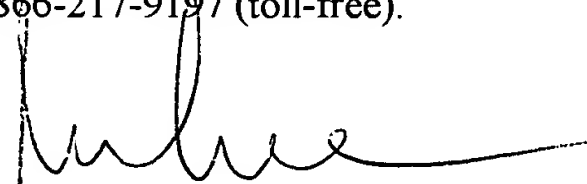
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN  
09/15/2004



*Dung Nguyen*  
*Primary Examiner*  
*Art Unit 2871*